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EXAMINER

HEINCER, LIAM J

ART UNIT	PAPER NUMBER
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1796

NOTIFICATION DATE	DELIVERY MODE
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10/30/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/582,000	Applicant(s) INOUE ET AL.	
	Examiner Liam J. Heincer	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,3,5-9,11-14 and 19-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,3,5-9,11-14 and 19-21 is/are rejected.
- 7) ☒ Claim(s) 2,3,5,6 and 19-21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 2, 3, 5, 6, and 19-21 are objected to because of the following informalities: Claims 2 and 19 have been amended to read “wherein the article is molding/forming products of a rubber-like composition”. This wording makes it appear as if the article is molding or forming a composition, not that the article is a molded article comprising the composition. A better wording would be “wherein the article is a molded/formed product of a rubber-like composition”. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Belt et al. (US Pat. 6,521,694).

Considering Claim 8: Belt et al. teaches a latex (2:26-36) of a hydrogenated (1:11-16) natural rubber (2:15-19). Belt et al. teaches a degree of hydrogenation of at least 60% (3:51-58). The phrasing “which is a resin modifier” is functional language that does not change the scope of the claim. See MPEP § 2111.02.

Considering Claim 9: Belt et al. teaches hydrogenating the polymer in the presence of a catalyst (3:31-39) and a solvent (3:66-4:2) or latex (1:11-16).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belt et al. (US 6,521,694) in view of Huppke (US 2,410,661).

Considering Claim 2: Belt et al. teaches a latex (2:26-36) of a hydrogenated (1:11-16) natural rubber (2:15-19). Belt et al. teaches a degree of hydrogenation of at least 60% (3:51-58). As the term elastic has not been explicitly defined and any rubber composition will have at least some degree of elasticity, the claim is considered met.

Belt et al. does not teach crosslinking the product. However, Huppke teaches that a hydrogenated natural rubber can be vulcanized/crosslinked after hydrogenation to form an article (1:9-30). Belt et al and Huppke are analogous art as they are concerned with the same field of endeavor, namely hydrogenated isoprene polymers. It would have been obvious to a person having ordinary skill in the art at the time of invention to have vulcanized the rubber of Belt et al as in Huppke, and the motivation to do so would have been, as Huppke suggests, it will provide a partially vulcanized rubber with improved elasticity and resistance to oxidation (1:9-30).

The Office realizes that Huppke teaches that the process involving hydrogenating was problematic due to the harsh hydrogenation conditions. However, since Belt et al eliminates many of these drawbacks (1:17-60), a person having ordinary skill in the art

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at the time of invention would not be disinclined to use the hydrogenated embodiment disclosed in Huppke.

Considering Claim 3: Belt et al. teaches hydrogenating the polymer in the presence of a catalyst (3:31-39) and a solvent (3:66-4:2).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Belt et al. (US Pat. 6,521,694) in view of Huppke (US 2,410,661) as applied to claim 2 above, and further in view of Sasagawa et al. (US 2003/0125475).

Considering Claim 5: Belt et al. and Huppke collectively teach the article of claim 2 as shown above.

Belt et al. does not teach the claimed molecular weight. However, Sasagawa et al. teaches a hydrogenated polyisoprenoid (¶0021) with a weight average molecular weight of preferably 80,000 to 400,000 (¶0020). Belt et al. and Sasagawa et al. are combinable as they are concerned with the same field of endeavor, namely hydrogenated polyisoprene polymers. It would have been obvious to a person having ordinary skill in the art at the time of invention to have used the molecular weight of Sasagawa et al. in the article of Belt et al., and the motivation to do so would have been, as Sasagawa et al. suggests, to increase the tensile strength of the article (¶0020).

Belt et al. does not teach the claimed molecular weight distribution. However, Sasagawa et al. teaches a hydrogenated polyisoprenoid (¶0021) with a molecular weight distribution of preferably 1.85 to 4 (¶0020). It would have been obvious to a person having ordinary skill in the art at the time of invention to have used the molecular weight distribution of Sasagawa et al. in the article of Belt et al., and the motivation to do so would have been, as Sasagawa et al. suggests, to provide a polymer with good processability (¶0020).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Belt et al. (US Pat. 6,521,694) in view of Huppke (US 2,410,661) as applied to claims 2 above, and further in view of Miller et al. (US Pat. 4,963,623).

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Considering Claim 6: Belt et al. and Huppke collectively teach the articles of claim 2.

Belt et al. does not teach the polyisoprene as coming from the claimed sources. However, Miller et al. teaches obtaining a polyisoprene (1:19-21) from *Havea Brasiliensis* (1:13-15). Belt et al. and Miller et al. are combinable as they are concerned with the same field of endeavor, namely polyisoprene latexes. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used the polyisoprene from *Havea Brasiliensis* in the article of Belt et al. as in Miller et al., and the motivation to do so would have been, as Miller et al. suggests, the high molecular weight of the polyisoprene (1:19-23).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sasagawa et al. (US 2003/0125475) in view of Belt et al. (US Pat. 6,521,694) as evidenced by Miller et al. (US Pat. 4,963,623).

Considering Claims 7: Sasagawa et al. also teaches making a molded article from a resin composition (¶0041) comprising a hydrogenated polyisoprene (¶0021)

Sasagawa et al. does not teach the polyisoprene as being a natural rubber. However, Belt et al. teaches a hydrogenated natural rubber with improved stability (2:15-25). Sasagawa et al. and Belt et al. are combinable as they are concerned with the same field of endeavor, namely hydrogenated polyisoprene polymers. It would have been obvious to a person having ordinary skill in the art at the time of invention to have used the natural rubber of Belt et al. in the resin composition of Sasagawa et al., and the motivation to do so would have been, as Miller et al. suggests, the high molecular weight of the natural rubber (1:19-23) and the ability to use natural rubber latexes in processes without modification (1:13-17).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Belt et al. (US Pat. 6,521,694) as applied to claim 8 above, and further in view of Sasagawa et al. (US 2003/0125475).

Considering Claim 5: Belt et al. teaches the article of claim 8 as shown above.

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Belt et al. does not teach the claimed molecular weight. However, Sasagawa et al. teaches a hydrogenated polyisoprenoid (§0021) with a weight average molecular weight of preferably 80,000 to 400,000 (§0020). Belt et al. and Sasagawa et al. are combinable as they are concerned with the same field of endeavor, namely hydrogenated polyisoprene polymers. It would have been obvious to a person having ordinary skill in the art at the time of invention to have used the molecular weight of Sasagawa et al. in the article of Belt et al., and the motivation to do so would have been, as Sasagawa et al. suggests, to increase the tensile strength of the article (§0020).

Belt et al. does not teach the claimed molecular weight distribution. However, Sasagawa et al. teaches a hydrogenated polyisoprenoid (§0021) with a molecular weight distribution of preferably 1.85 to 4 (§0020). It would have been obvious to a person having ordinary skill in the art at the time of invention to have used the molecular weight distribution of Sasagawa et al. in the article of Belt et al., and the motivation to do so would have been, as Sasagawa et al. suggests, to provide a polymer with good processability (§0020).

Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasagawa et al. (US 2003/0125475) in view of Belt et al. (US Pat. 6,521,694) as evidenced by Miller et al. (US Pat. 4,963,623).

Considering Claims 12-14: Sasagawa et al. teaches a resin composition comprising a resin (§0036) and a hydrogenated polyisoprene (§0021) present in an amount from 0.1 to 100 parts by weight per 100 parts by weight of the resin (§0036). Sasagawa et al. also teaches making a molded article from the resin composition (§0041).

Sasagawa et al. does not teach the polyisoprene as being a natural rubber. However, Belt et al. teaches a hydrogenated natural rubber with improved stability (2:15-25). Belt et al. teaches a degree of hydrogenation of at least 60% (3:51-58). Sasagawa et al. and Belt et al. are combinable as they are concerned with the same field of endeavor, namely hydrogenated polyisoprene polymers. It would have been obvious to a person having ordinary skill in the art at the time of invention to have used

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the natural rubber of Belt et al. in the resin composition of Sasagawa et al., and the motivation to do so would have been, as Miller et al. suggests, the high molecular weight of the natural rubber (1:19-23) and the ability to use natural rubber latexes in processes without modification (1:13-17).

Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belt et al. (US 6,521,694) in view of Huppke (US 2,410,661).

Considering Claim 19: Belt et al. teaches a latex (2:26-36) of a hydrogenated (1:11-16) natural rubber (2:15-19). Belt et al. teaches a degree of hydrogenation of at least 60% (3:51-58). As the term elastic has not been explicitly defined and any rubber composition will have at least some degree of elasticity, the claim is considered met.

Belt et al. does not teach crosslinking the product. However, Huppke teaches that a hydrogenated natural rubber can be vulcanized/crosslinked after hydrogenation to form an article (1:9-30). Belt et al and Huppke are analogous art as they are concerned with the same field of endeavor, namely hydrogenated isoprene polymers. It would have been obvious to a person having ordinary skill in the art at the time of invention to have vulcanized the rubber of Belt et al as in Huppke, and the motivation to do so would have been, as Huppke suggests, it will provide a partially vulcanized rubber with improved elasticity and resistance to oxidation (1:9-30).

The Office realizes that Huppke teaches that the process involving hydrogenating was problematic due to the harsh hydrogenation conditions. However, since Belt et al eliminates many of these drawbacks (1:17-60), a person having ordinary skill in the art at the time of invention would not be disinclined to use the hydrogenated embodiment disclosed in Huppke.

Considering Claim 20: Belt et al. teaches hydrogenating the polymer in the presence of a catalyst (3:31-39) and a solvent (3:66-4:2).

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Belt et al. (US Pat. 6,521,694) in view of Huppke (US 2,410,661) as applied to claims 19 above, and further in view of Miller et al. (US Pat. 4,963,623).

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Considering Claim 21: Belt et al. and Huppke collectively teach the articles of claim 19.

Belt et al. does not teach the polyisoprene as coming from the claimed sources. However, Miller et al. teaches obtaining a polyisoprene (1:19-21) from *Havea Brasiliensis* (1:13-15). Belt et al. and Miller et al. are combinable as they are concerned with the same field of endeavor, namely polyisoprene latexes. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used the polyisoprene from *Havea Brasiliensis* in the article of Belt et al. as in Miller et al., and the motivation to do so would have been, as Miller et al. suggests, the high molecular weight of the polyisoprene (1:19-23).

Response to Arguments

Applicant's arguments filed July 11, 2008 have been fully considered but they are not persuasive, because:

A) Applicant's argument that Belt et al. does not teach a hydrogenation of 50 or more percent is not persuasive. Belt et al in fact does teach the degree of hydrogenation as being at least 60% (3:51-58).

B) In response to applicant's argument that natural rubber has excellent properties and price, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liam J. Heincer whose telephone number is 571-270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo, Ph.D./

Supervisory Patent Examiner, Art Unit 1796

LJH

October 9, 2008